

Online Assessment of Satellite-derived Global Precipitation Products

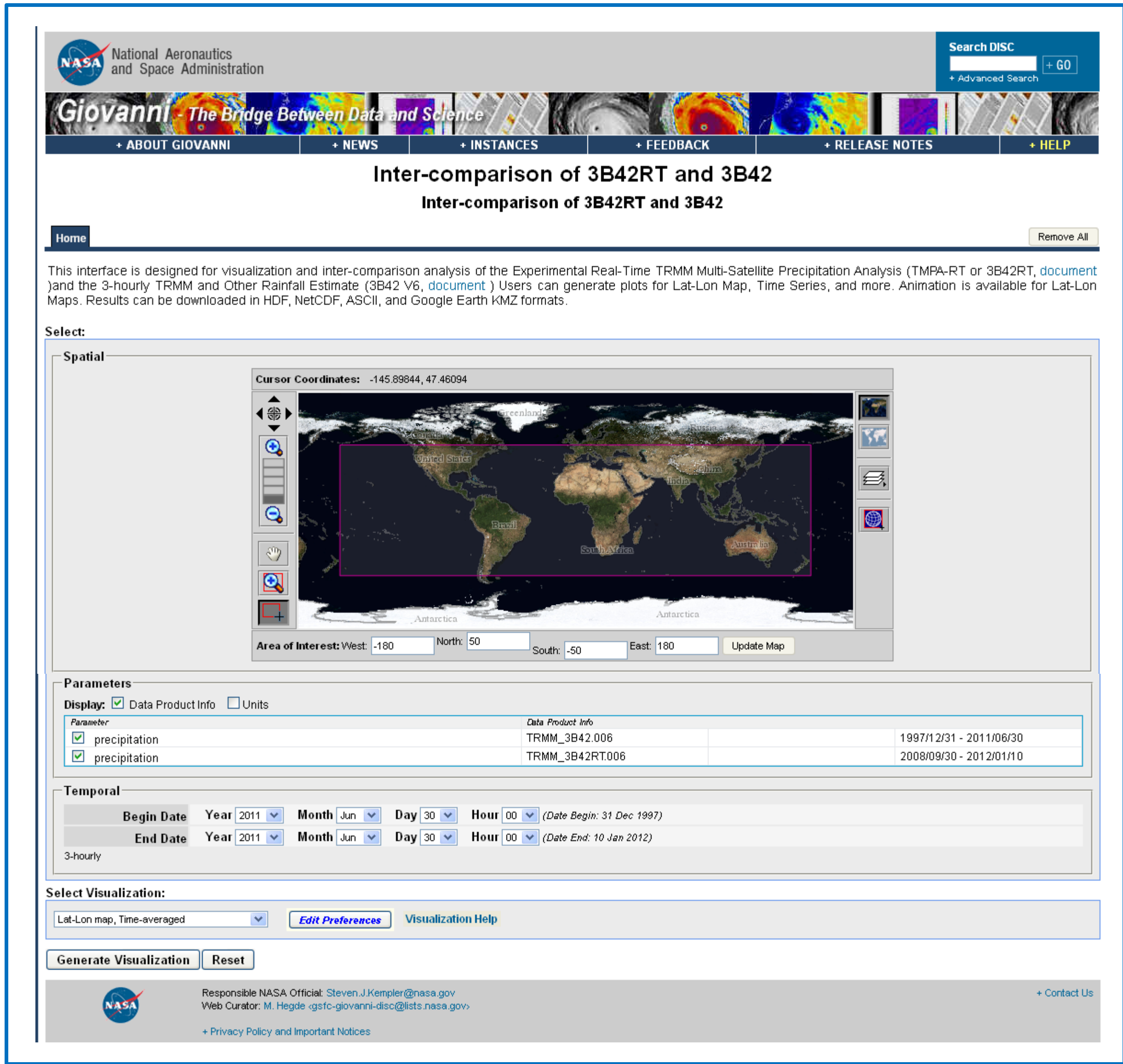
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Inter-comparison of 3B42RT and 3B42

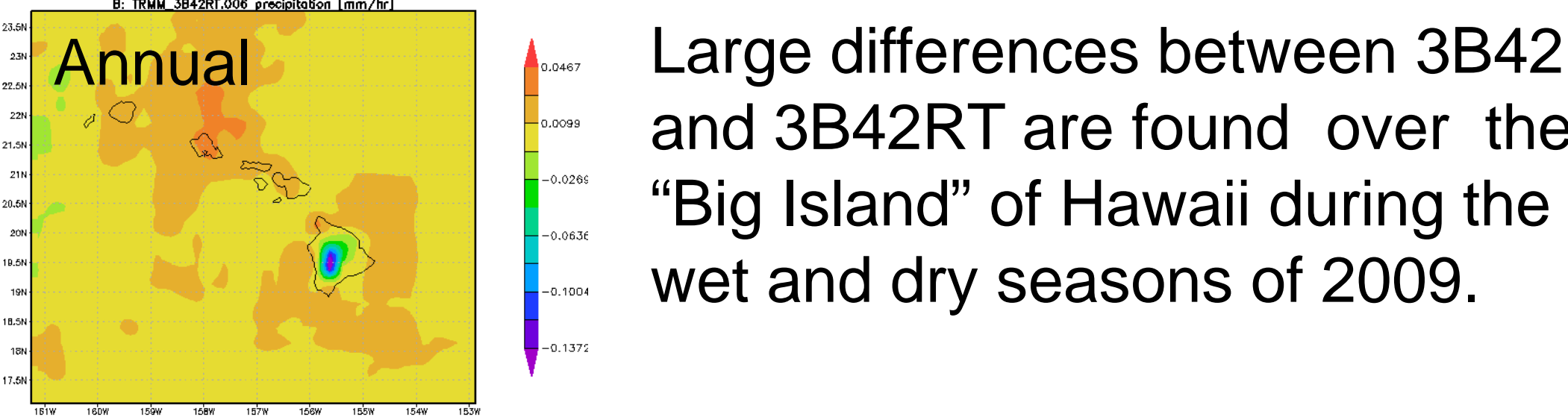
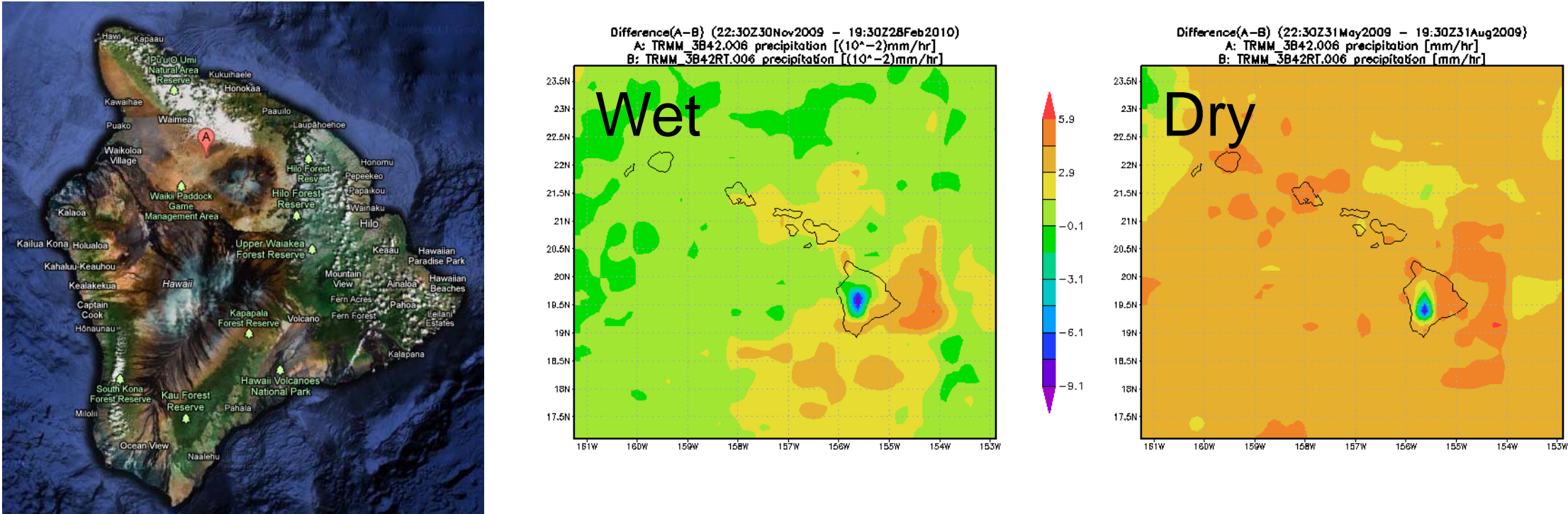
http://gdata1-ts1.sci.gsfc.nasa.gov/daac-bin/G3/gui.cgi?instance_id=rt_intercomp



Available functions:

- Animation
- Overlay of Lat-Lon Maps
- Correlation map
- Lat-Lon map of time-averaged differences
- Scatter plot
- Scatter plot, time-averaged
- Time series
- Time series, area-averaged differences
- Time series, area statistics

The tool for inter-comparison of 3B42 and 3B42RT provides application users the ability to inter-compare near-real-time (3B42RT) and research quality (3B42) rainfall products for product adjustments (i.e., biases).



Large differences between 3B42 and 3B42RT are found over the “Big Island” of Hawaii during the wet and dry seasons of 2009.

ABSTRACT

Precipitation is difficult to measure and predict. Each year droughts and floods cause severe property damages and human casualties around the world. Accurate measurement and forecast are important for mitigation and preparedness efforts. Significant progress has been made over the past decade in satellite precipitation product development. In particular, products’ spatial and temporal resolutions as well as timely availability have been improved by blended techniques. Their resulting products are widely used in various research and applications. However biases and uncertainties are common among precipitation products and an obstacle exists in quickly gaining knowledge of product quality, biases and behavior at a local or regional scale, namely user defined areas or points of interest. Current online inter-comparison and validation services have not addressed this issue adequately.

To address this issue, we have developed a prototype to inter-compare satellite derived daily products in the TRMM Online Visualization and Analysis System (TOVAS). Despite its limited functionality and datasets, users can use this tool to generate customized plots within the United States for 2005. In addition, users can download customized data for further analysis, e.g. comparing their gauge data. To meet increasing demands, we plan to increase the temporal coverage and expanded the spatial coverage from the United States to the globe. More products have been added as well.

In this poster, we present two new tools:

- Inter-comparison of 3B42RT and 3B42
- Inter-comparison of V6 and V7 TRMM L-3 monthly products

The future plans include integrating IPWG (International Precipitation Working Group) Validation Algorithms/statistics, allowing users to generate customized plots and data. In addition, we will expand the current daily products to monthly and their climatology products. Whenever the TRMM science team changes their product version number, users would like to know the differences by inter-comparing both versions of TRMM products in their areas of interest. Making this service available to users will help them to better understand associated changes. We plan to implement this inter-comparison in TRMM standard monthly products with the IPWG algorithms.

The plans outlined above will complement and accelerate the existing and ongoing validation activities in the community as well as enhance data services for TRMM and the future Global Precipitation Mission (GPM).

Acknowledgement: “Integrate IPWG Validation Algorithms into TRMM Online Visualization and Analysis System (TOVAS).” This project is part of NNH10ZDA001N-ESDRERR, “Earth System Data Records Uncertainty Analysis.”

Ongoing: Integrate IPWG Validation Algorithms into TRMM Online Visualization and Analysis System (TOVAS) :

- Inter-comparison of V6 and V7 TRMM (beta versions)
- Inter-comparison of daily rainfall products (to be released in 2012)
- Inter-comparison of climatology products (to be released in 2013)

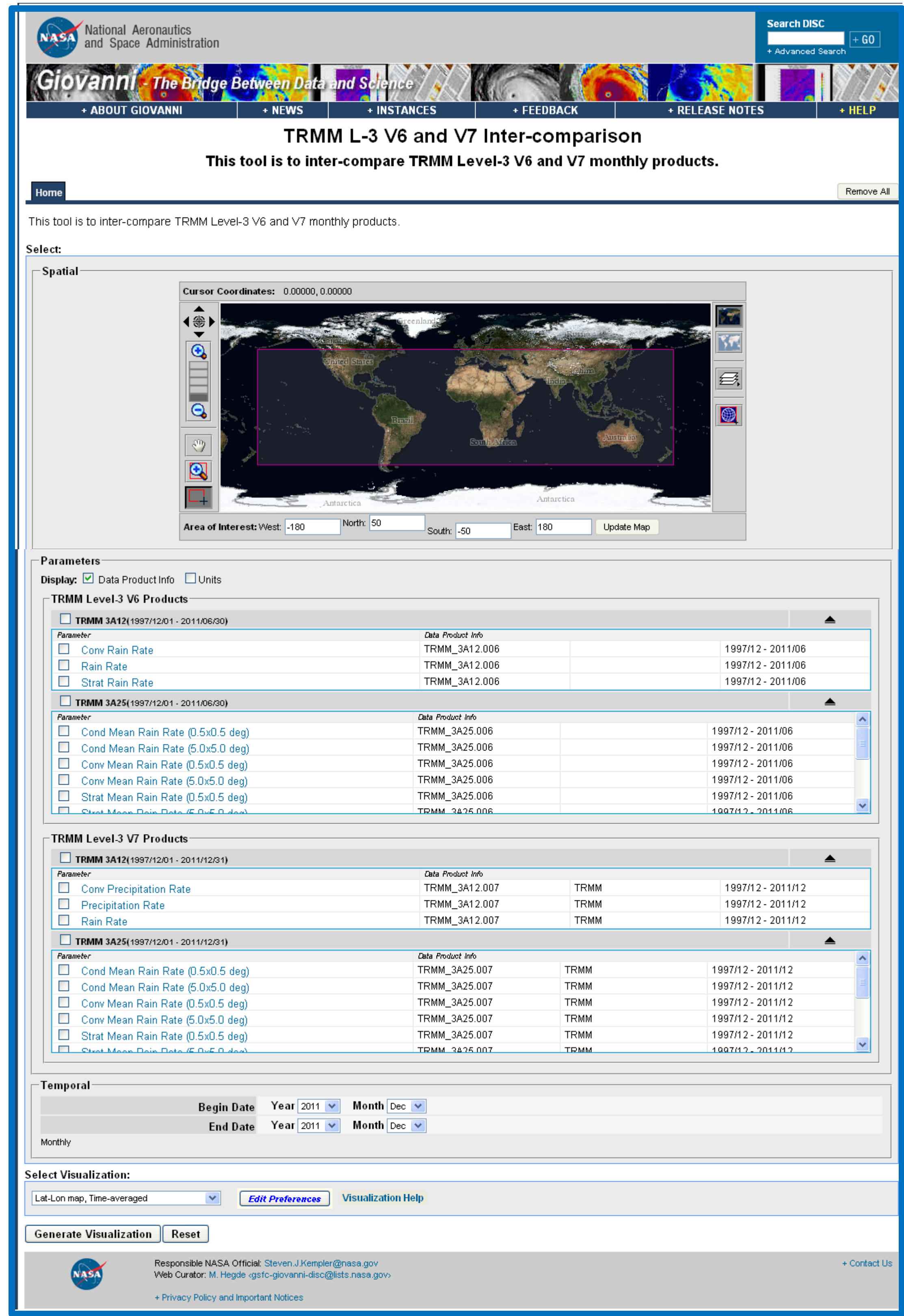
TOVAS: <http://disc2.nascom.nasa.gov/Giovanni/tovas/>

- Mirador: <http://mirador.gsfc.nasa.gov/>
- GPCP 2.2 in TOVAS: <http://disc2.nascom.nasa.gov/Giovanni/tovas/rain.GPCP.shtml>
- PDISC Portal: <http://disc.sci.gsfc.nasa.gov/precipitation>
- Hurricane Data Analysis Tool: http://disc.sci.gsfc.nasa.gov/daac-bin/hurricane_data_analysis_tool.pl
- TRMM Near-real-time Product in USDA Crop Explorer: http://www.pecad.fas.usda.gov/cropeexplorer/mpa_maps.cfm
- Current Rainfall Conditions: http://disc.sci.gsfc.nasa.gov/agriculture/additional/tools/current_conditions.shtml



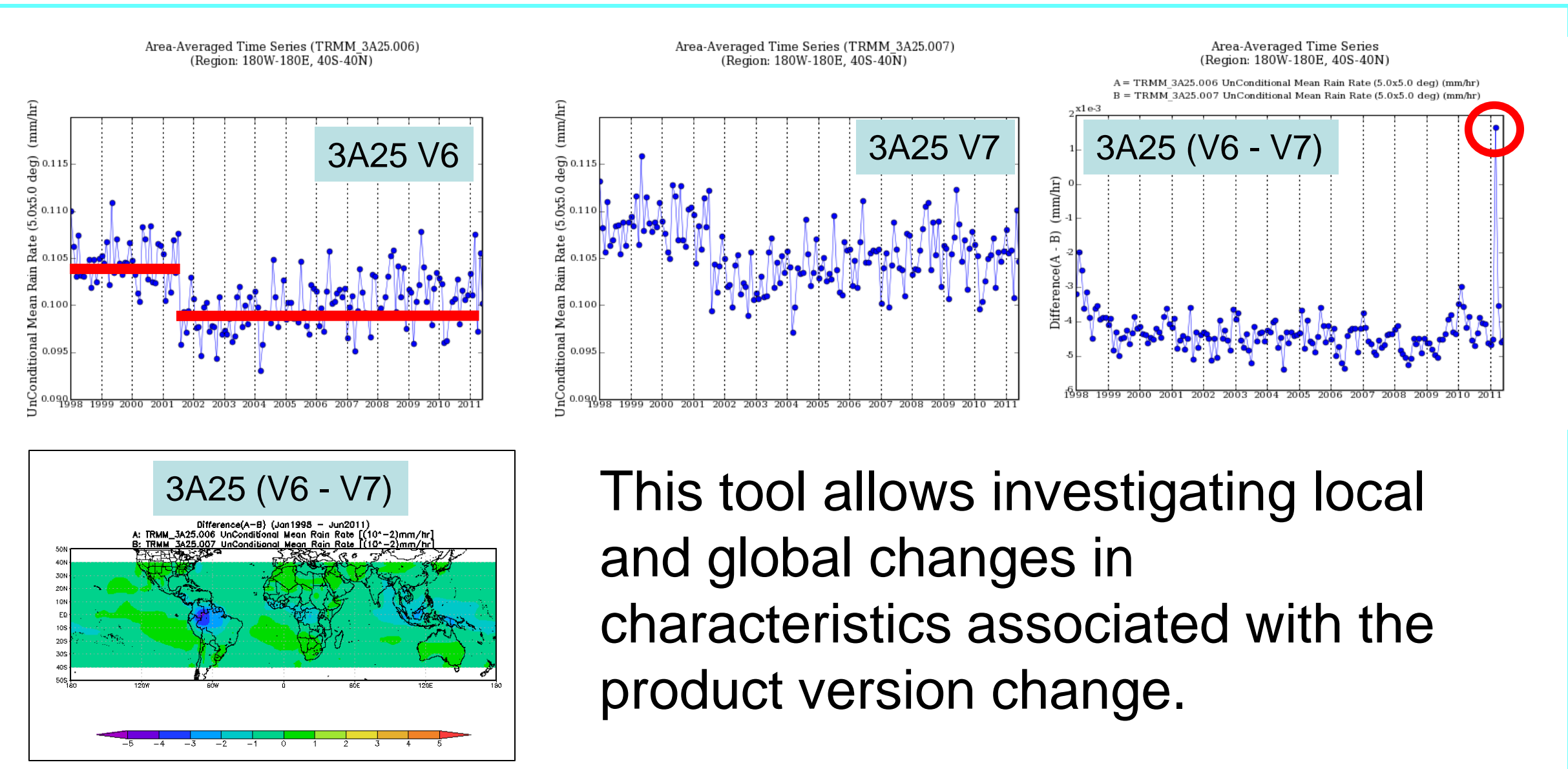
Inter-comparison of TRMM V6 and V7 Monthly Products

http://gdata1-ts1.sci.gsfc.nasa.gov/daac-bin/G3/gui.cgi?instance_id=TRMM_L3_comp



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This tool allows investigating local and global changes in characteristics associated with the product version change.